



Solid-state contactor 3-phase 3RF3 AC 53 / 16 A / 40 °C 48-480 V / 24 V  
DC 2-phase controlled Instantaneous switching Spring-type terminal

product brand name	SIRIUS
product designation	solid-state contactor
design of the product	two-phase controlled
product type designation	3RF34

### General technical data

product function	instantaneous switching
power loss [W] for rated value of the current	
• at AC in hot operating state	28 W
• at AC in hot operating state per pole	9.33 W
• without load current share typical	0.4 W
insulation voltage rated value	600 V
type of voltage of the control supply voltage	DC
surge voltage resistance of main circuit rated value	6 kV
shock resistance according to IEC 60068-2-27	15g / 11 ms
vibration resistance according to IEC 60068-2-6	2g
certificate of suitability	CE / UL / CSA / CCC / C-Tick (RCM)
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	05/28/2009

### Main circuit

number of poles for main current circuit	3
number of NO contacts for main contacts	2
number of NC contacts for main contacts	0
operating voltage at AC	
• at 50 Hz rated value	48 ... 480 V
• at 60 Hz rated value	48 ... 480 V
operating frequency rated value	50 ... 60 Hz
relative symmetrical tolerance of the operating frequency	10 %
operating range relative to the operating voltage at AC	
• at 50 Hz	40 ... 506 V
• at 60 Hz	40 ... 506 V
operational current	
• at AC-3 at 400 V rated value	16 A
• at AC-53a at 400 V at ambient temperature 40 °C rated value	16 A
operational current minimum	500 mA
operating power	
• at AC-3 at 400 V rated value	7.5 kW
rate of voltage rise at the thyristor for main contacts maximum permissible	1 000 V/μs
blocking voltage at the thyristor for main contacts maximum permissible	1 200 V

reverse current of the thyristor	10 mA
derating temperature	40 °C
surge current resistance rated value	1 150 A
I <sup>2</sup> t value maximum	6 600 A <sup>2</sup> ·s

#### Control circuit/ Control

<b>type of voltage of the control supply voltage</b>	DC
<b>control supply voltage 1</b>	
• at DC rated value	24 V
<b>control supply voltage</b>	
• at DC initial value for signal <1> detection	15 V
• at DC full-scale value for signal<0> recognition	5 V
<b>symmetrical line frequency tolerance</b>	5 Hz
<b>operating range factor control supply voltage rated value at DC</b>	
• initial value	0.63
• full-scale value	1.25
<b>control current at minimum control supply voltage</b>	
• at DC	2 mA
control current at DC rated value	15 mA
<b>ON-delay time</b>	1 ms
<b>OFF-delay time</b>	1 ms; additionally max. one half-wave

#### Auxiliary circuit

<b>number of NC contacts for auxiliary contacts</b>	0
<b>number of NO contacts for auxiliary contacts</b>	0
number of CO contacts for auxiliary contacts	0

#### Installation/ mounting/ dimensions

<b>mounting position</b>	vertical
<b>fastening method</b>	screw and snap-on mounting onto 35 mm DIN rail
• side-by-side mounting	Yes
<b>design of the thread of the screw for securing the equipment</b>	M4
<b>height</b>	95 mm
<b>width</b>	90 mm
<b>depth</b>	100.8 mm
required spacing with side-by-side mounting	
• upwards	70 mm
• downwards	50 mm

#### Connections/ Terminals

<b>product component removable terminal for auxiliary and control circuit</b>	Yes
<b>type of electrical connection</b>	
• for main current circuit	spring-loaded terminals
• for auxiliary and control circuit	spring-loaded terminals
<b>type of connectable conductor cross-sections</b>	
• for main contacts	
— solid	2x (0.5 ... 2.5 mm <sup>2</sup> )
— finely stranded with core end processing	2x (0.5 ... 1.5 mm <sup>2</sup> )
— finely stranded without core end processing	2x (0.5 ... 2.5 mm <sup>2</sup> )
• at AWG cables for main contacts	2x (18 ... 14)
<b>connectable conductor cross-section for main contacts</b>	
• solid or stranded	0.5 ... 2.5 mm <sup>2</sup>
• finely stranded with core end processing	0.5 ... 1.5 mm <sup>2</sup>
• finely stranded without core end processing	0.5 ... 2.5 mm <sup>2</sup>
<b>type of connectable conductor cross-sections</b>	
• for auxiliary and control contacts	
— solid	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
— finely stranded with core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
— finely stranded without core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
• at AWG cables for auxiliary and control contacts	1x (AWG 20 ... 12)
AWG number as coded connectable conductor cross section for main contacts	14 ... 10
<b>design of the thread of the connection screw</b>	
• of the auxiliary and control contacts	M3

<b>stripped length of the cable</b>	
<ul style="list-style-type: none"> <li>for main contacts</li> <li>for auxiliary and control contacts</li> </ul>	<p>10 mm</p> <p>10 mm</p>
<b>UL/CSA ratings</b>	
<b>full-load current (FLA) for 3-phase AC motor</b>	
<ul style="list-style-type: none"> <li>at 480 V rated value</li> </ul>	7.6 A
yielded mechanical performance [hp] for 3-phase AC motor	
<ul style="list-style-type: none"> <li>at 200/208 V rated value</li> <li>at 220/230 V rated value</li> <li>at 460/480 V rated value</li> </ul>	<p>2 hp</p> <p>2 hp</p> <p>5 hp</p>
<b>Safety related data</b>	
proportion of dangerous failures with high demand rate according to SN 31920	50 %
<b>MTTF with high demand rate</b>	76 a
T1 value for proof test interval or service life according to IEC 61508	20 a
<b>protection class IP on the front according to IEC 60529</b>	IP20
<b>touch protection on the front according to IEC 60529</b>	finger-safe, for vertical contact from the front
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	1 000 m
<b>ambient temperature</b>	
<ul style="list-style-type: none"> <li>during operation</li> <li>during storage</li> </ul>	<p>-25 ... +60 °C</p> <p>-55 ... +80 °C</p>
<b>Electromagnetic compatibility</b>	
<b>conducted interference</b>	
<ul style="list-style-type: none"> <li>due to burst according to IEC 61000-4-4</li> <li>due to conductor-earth surge according to IEC 61000-4-5</li> <li>due to conductor-conductor surge according to IEC 61000-4-5</li> <li>due to high-frequency radiation according to IEC 61000-4-6</li> </ul>	<p>2 kV / 5 kHz behavior criterion 2</p> <p>2 kV behavior criterion 2</p> <p>1 kV behavior criterion 2</p> <p>140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1</p>
<b>electrostatic discharge according to IEC 61000-4-2</b>	4 kV contact discharging / 8 kV air discharging, behavior criterion 2
<b>conducted HF interference emissions according to CISPR11</b>	Class A for industrial environment
<b>field-bound HF interference emission according to CISPR11</b>	Class A for industrial environment
<b>Short-circuit protection, design of the fuse link</b>	
manufacturer's article number	
<ul style="list-style-type: none"> <li>of full range R fuse link for semiconductor protection at NH design usable</li> <li>of full range R fuse link for semiconductor protection at cylindrical design usable</li> <li>of back-up R fuse link for semiconductor protection at NH design usable</li> <li>of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable</li> <li>of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable</li> <li>of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable</li> </ul>	<p><a href="#">3NE1818-0</a></p> <p><a href="#">5SE1363</a></p> <p><a href="#">3NE8022-1</a></p> <p><a href="#">3NC1032</a></p> <p><a href="#">3NC1450</a></p> <p><a href="#">3NC2280</a></p>
manufacturer's article number of the gG fuse	
<ul style="list-style-type: none"> <li>at NH design usable</li> <li>at cylindrical design 10 x 38 mm usable</li> <li>at cylindrical design 22 x 58 mm usable</li> </ul>	<p><a href="#">3NA3812-6</a></p> <p><a href="#">3NW6010-1</a></p> <p><a href="#">3NW6210-1</a></p>
<b>Certificates/ approvals</b>	
<b>General Product Approval</b>	<b>EMC</b>



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[Type Test Certificates/Test Report](#)

[Confirmation](#)

#### Further information

##### Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

##### Information- and Downloadcenter (Catalogs, Brochures,...)

<https://www.siemens.com/ic10>

##### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF3416-2BB04>

##### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3416-2BB04>

##### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF3416-2BB04>

##### Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF3416-2BB04&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF3416-2BB04&lang=en)





